

Besides Zaha or Adenowo: Investigating the Visibility Status of Female Architects as Role Models for Students of Architecture

Fulani Omoyeni, Amole Dolapo, Aderonmu Peter, Adewale Bukola, Babalola, Daniel, Jegede, Foluke

Abstract: Recent glimpses and revelations from the education and practice of architectural profession suggested that the visibility status of Female Architects as role models for students under tutelage is still hazy [1]. Highly worthy of note is that increasing numbers of female students are enrolled into architecture programs on a yearly basis but when juxtaposed with the high rate of attrition recorded at the point of exit from Nigerian universities, it significantly varies. As stated by the Sustainable Development Goals (SDG) of the United Nations, the fifth objective is to ensure the attainment of gender equality among people in the societies of the world [2]. This paper investigated and reported the findings of a study on the visibility status of female architects as role models for architecture students. Using a sample of 378 (101 females and 277 males) students drawn from 3 private universities in South-west Nigeria, a survey was carried out to find out how visible female architects were as role models to students of architecture. The data were analysed using univariate analysis like proportions and percentages and results were presented in tables. Findings indicated that only 2 female architects popularised by media were cited as role models by more than half of the respondents indicating poor or hazy visibility of other successful women in the field. This paper recommended that pragmatic steps should be taken by stakeholders of the architecture profession at different levels using the more effective visibility windows of media to showcase the high-stake achievements and personalities of successful female architects as role models to inspire both the female architects in practice and same categories under tutelage.

Index Terms: Female architects, Gender equality, Role model, Visibility status, Visibility windows

I. INTRODUCTION

Prior to the twenty-first century, the visibility status of Female Architects as role models for students of architecture was low. In that era, the field of architecture was almost exclusively reserved for men. The same has however witnessed the influx of female Architects into various ranks of the professional landscape. More recently, female Architects

have also been awarded prizes of honor in recognition of their impact in the field of architectural education and practice. In spite of these achievements, the proportional imbalance in the population of males and females in the profession persists. Recently, there was an encouraging trend of nearly balanced enrolment of males and females in schools of architecture in certain parts of the world, as indicated by reports from countries like USA and New Zealand [1], [2].

However, as one ascends in the professional echelons, the proportion of females to males are successively skewed in a discouraging manner [1]. More so, factors attributed to the decline are complex [3]-[5], as advanced research into the high rate of attrition by females has yielded mixed results. A major factor responsible for this trend is the lack of several role models to encourage fresh female graduates to continue with the profession [6]. Due to a lack of visible role models, many would be star-female architects fall into the stereotype threat and leave the profession altogether or modify their career goals to fit the flow. To stem this tide, enhancing the visibility status of female architects and respective high achievements are probable sources of inspiration for younger female architecture students who are still under tutelage. In this regard, conscious efforts needed to be taken by the stakeholders and altruistic individuals within the profession to ensure a celebrated visibility status of female Architects. It has also been discovered that when role models are made visible, [7]-[9], it gingers the intellect and raises the aspirations of younger minds to soar up hierarchically with passion into the upper echelons of career trajectory for high stake achievements.

Revelations from the American Institute of Architects (AIA), the Royal Institute of British Architects (RIBA), Australian Institute of Architects, other parallel professional bodies as well as progressive individuals all over the world have also shown intelligent initiatives to improve the visibility of female architects in their domain, particularity and giftedness. For example, in 2017, RIBA had an 'Ethel Day' in honour of Ethel Charles, the first female to be accepted into the RIBA, where they shared individual pictures and works of women architects which were found inspiring. While these initiatives are highly laudable, females in developing societies like Nigeria, though being increasingly mobilised to enroll into school of architecture are still limited or side-tracked from mainstream architecture practice due to strong gender stereotypes and the absence of several role models they can identify with [10].

Revised Manuscript Received on July 05, 2019

FULANI Omoyeni, Department of Architecture, Covenant University, Ota, Nigeria.

AMOLE, Dolapo, Department of Architecture, Obafemi Awolowo University, Ile-Ife, Nigeria.

ADERONMU, Peter, Department of Architecture, Covenant University, Ota, Nigeria.

BABALOLA, Daniel, Department of Architecture, Covenant University, Ota, Nigeria.

ADEWALE, Bukola, Department of Architecture, Covenant University, Ota, Nigeria.

JEGEDE, Foluke, Department of Architecture, Covenant University, Ota, Nigeria.



A. Aim of the Study

This paper investigated the visibility status of female architects as role models for students of architecture in Nigeria with a view to seek ways to encourage more females to enroll into architecture. The main objectives were (i) To identify the available female architect role-models to Nigerian students of architecture and describe their visibility status, (ii) To identify the ways the students came to know them (visibility windows) and (iii) to suggest ways of boosting the visibility status of the female role-models from theoretical standpoints.

II. LITERATURE REVIEW

This section contains a literature review of relevant concepts such as stereotype threat for women in architecture and the motivational theory of role modelling which was used to underpin this study.

A. Stereotype Threat in Architecture

A stereotype threat is said to occur when a person or group of people fear that they will live up to a negative expectation or stereotype that people have about their group. This could be a social one like gender or race [11] and [12]. Females in careers like architecture fall into the category of those with a stereotype threat because a common perception about them is that they cannot be as successful as their male counterparts, especially in developing countries like Nigeria [10] where gender [3] and societal attitudes [13] are still strong in defining occupational roles. Reference [14] pointed out that to a greater degree, the popularised image of an architect in media is that of a Caucasian male. This, among many other reasons often aids to depict architecture as not only a man's profession but restricted to certain social categories such as caucasians. In response to this stereotype, persons in such categories tend to engage in personal defeatist behaviour or take negative actions that cause them to live up to that stereotype. Examples of this behaviour or actions are putting in reduced effort, disengaging from the field or totally changing life aspirations and career goals [15]. In the field of architecture, women are more likely than their male counterparts to leave the profession [14]. This often occurs at the point of graduation, which marks a major point of attrition, for females who tend not to visualise prospects for them in the profession. Also, in the field of practice, the point of professional registration or setting up a personal practice is either a major point of exit or glass ceiling beyond which few women have been observed to rise [1].

It has been proven that stereotype threat can be overturned by providing role models [16], encouraging self-affirmation [17] and emphasising motivation and effort [18]. In the case of architecture, years of persistence, however, by women determined to be architects, working hard against the grain and other deliberate attempts are turning the tide against this prevalent concept [1]. It has also been noted [8] that the scarcity of female role models in architecture can be profoundly damaging to the profession. In a study by the San Francisco chapter of the AIA, it was found that one third of women dropped out of the architecture profession due to lack of role models [6]. In more recent years, women have enrolled in architectural training and in certain countries the female

enrolment in schools and in the professional practice is at par or nearly at par with the males. Also, in terms of overall academic performance in certain schools, the females are more outstanding [19].

While it has been proven that choosing a counter stereotypical model is most effective in eroding stereotype threats, research [16], [20] has highlighted that role models must first be visible before they can be effective. Several female architects have made huge and outstanding achievements with their architectural knowledge or expertise that have made them worthy role models, yet their achievements have not been rendered visible. The achievements of female architects like Louise Bethune Blanchard, Julia Morgan, Ann Beha, Frances Halsband, Eva Jiricna and Itsuko Hasegawa were recognised by [17] in their book. Increasing their visibility by highlighting their works would be very instrumental to eroding the negative stereotype threat of women's lack of success in architecture. This can be underscored by Zaha Hadid's widely publicised achievements. It was asserted that since 2004 when she won the Pritzker prize, the enrolment rate of women in the American Institute of Architects (AIA) has drastically improved [9]. This is because her sex makes her a more embodied role model for women. Her widely publicised and visible profile in the media heightens her visibility. Reference [22] however argued that having a plethora of visible role models to draw from would give more positive outcomes for role aspirant achievement. This was because these various role models and their different demographics and characteristics would make them more eligible as role models for role aspirants with varying backgrounds. The increasing visibility of female architects especially on all forms of media and in the society at large is indeed a welcome strategy in eradicating the stereotype threat for females in architecture.

B. Motivational Theory of Role Modelling

As a conceptual base for this paper, aspects of the motivational theory of role modelling were adopted [22] to create practical ways by which role models can actually motivate an individual to achieve a desired goal. This theory argues that availability of role models can influence role aspirants' goals to yield diversified outcomes through series of interdependent or interrelated functions and mechanisms. Reference [22] identified three possible functions which role models serve in the role modelling process as 1) behavioural models, 2) as models of what is attainable and 3) as inspiration. It is believed that by a careful or conscious interplay of these functions and mechanisms (see Table I), there can be positive gains in goal achievement for role aspirants. Earlier works [23], [24] had largely popularised the concept of role models. Merton [23] coined the term role-model to describe persons in certain roles who depict samples of the desired behavior associated with the role. Reference [22] coined the term role-aspirants to depict individuals aspiring to be like a role-model and defined a role-model as "an individual who influences role aspirants' achievements, motivation, and goals by acting as behavioural models, representations of the

possible, and/or inspirations". A role model may be a current prominent icon in a chosen profession, a historical model or anybody in general who embodies or represents either partly or in whole what the role aspirant wants to become.

1) *Role models as behavioural models*

In situations where goals are set, or career paths chosen, role models are often sighted or discovered, and aspirants are motivated to be like them. The role model may be a college professor or a boss in an internship program or an accomplished professional. Having a role model as a behavioural model means that the aspirants emulate what they do. As a role model demonstrates, the aspirants emulate. In many instances the role model possesses skills or has attained what the aspirant wants to attain. The aspirant can directly learn this by watching the role model and following closely and taking practical steps which, the role model has taken, such as getting college degrees or enrolling as an intern in fields where this is applicable. In this process, the role aspirant can get further motivated in his chosen career path. He may pick up new cognitive, emotional and practical skills and strategies which help him to achieve his career or professional goal. In professional development or educational settings, this behavioural emulation is tagged as vicarious learning [25]. It helps to build the self-efficacy or personal confidence that one can attain the goal especially when levels of success at the task or desirable outcomes are achieved.

2) *Role models as representations of the possible*

Some researchers focus on role models as a standard or representation of what is attainable, possible or achievable. They provide an example of the kind of success that one can

achieve. They go beyond showing how this chosen goal can be attained but rather exemplify or show forth that the goal is attainable. Reference [16] described them as successful members that share one's group and represent future opportunities or prospects for role aspirants. Reference [26] described this as sending the message to role aspirants that 'if I can do this, so you can too'. This role is important because it is different from showing how step by step to become but alerts you to a possibility. This is particularly significant because it may be something that the aspirant may not have considered possible before but by seeing the demonstration of the attainability of it, it may spark of a new goal or positively alter an existing goal.

3) *Role models as inspirations*

In this case, role models are an embodiment of something desirable or worth struggling for. They sometimes function as an embodiment of a desirable goal or aspiration. Role models who are excellent are expected to excite and elicit admiration in the role aspirant to be like them [27]. A worthy role model will inspire a role aspirant to desire to become like him and set his goals accordingly. Unlike the first two functions where they serve as a behavioural template or a show of what is attainable, they can motivate the role aspirant to strive to achieve something new or more valuable by creating an invisible energy, potential or zeal for this.

Table I contains a summary of the motivational theory of Role modelling [22].

Table I: Summary of attributes from the Motivational theory of Role modelling

Functions	Role Aspirant Attributes	Role Model Attributes	Role Model Qualities	Mechanisms	Mediating Variables	Outcomes
Behavioural models	Pre-existing goals	Level of role model success	Goal embodiment	Vicarious learning	Expectancy	Skill acquisition
Representation of the possible	Level of role aspirant success	Reasons for role model success	Attainability	Changing self-stereotypes	Value	Motivation
Inspirations	Ability beliefs	Competence	Desirability	Changing perception of external barriers		Goal reinforcement
	Theories of abilities	Sociability		Identification		Goal adoption
	Self-esteem	Morality		Internalization		
	Values			Admiration		
	Similarity					
	Shared group membership					

Source: Morgenthroth et al [22]

C. Who Can be a Role Model?

These 3 functions of role models are found to be intertwined and sometimes cyclical. For example, in the course of vicarious learning, a role aspirant having mastered a certain skill, may suddenly discover new career possibilities which lead him to modify his earlier career goals or be further inspired by the role model to seek out new skills to vicariously pursue. Irrespective of which of these functions the role model performs, their importance in career development is

invaluable and usually charts the path ahead for would be role aspirants. It is pertinent to mention that all three functions are important because challenges in the path of achieving any goal would be made easier by visible role models. Having someone who has achieved a certain goal to look up to makes it easier because it makes the goal look attainable, there is a model to emulate and there is where to draw inspiration from.

Commonly, role models may not be consciously chosen



especially in social settings. As highlighted in social learning Theories [24], domestic settings naturally create platforms for automatic role models in tender years. Parents, siblings and teachers are often cited by individuals as earlier role models. However, in consciously choosing a role model or in identifying whose achievement to aspire to, certain qualities or issues often come to play.

Reference [20] stated that anyone could be a role model in as much as the individual serves any one or more of the three functions identified earlier but identified that visibility was a major determinant. This is quite logical as it is only someone whose achievements are celebrated or of whom we are aware of that could be emulated. Public figures who are highly popularised like music or sport celebrities, clergy, political leaders, parents and professional high flyers fall into this category. Examples include Barak Obama, Mother Theresa, The Pope, Nelson Mandela or Michael Jackson. People, irrespective of their age or level of achievement, may have role models but mostly young or upcoming professionals, choose role models to emulate either as part of the prescribed professional training or education especially for professional courses. Role models are particularly important in uncharted career paths or in careers which have a stereotype threat where certain social groups like women, racial categories or economic classes are often exempted.

The motivational theory of role models has exemplified that for role models to be successful they must have the following qualities. Visibility means that their presence or achievements must be plainly open and accessible for all to see. Individuals or representatives of categories whose achievements are not openly available are not likely to be chosen as role models. It is also important that role models embody the goals of the role aspirant. Goal embodiment means how much a role model represents the idea or goal of a role aspirant [22]. For example, an architect will embody the goal of a student of architecture. Goal embodiment often surpasses simple attainment of a goal by a role model. Due to the fact that role aspirants may have multiple goals, out of a series of possible role models, only one may best embody the aspirant's goals and hence be the most effective. In the example of the architect, the student may aspire not to be a practicing architect but rather be a building researcher involved in college teaching. Thus, a qualified practicing architect specialising in architectural consulting alone may not totally embody this goal and hence will not be a suitable role model. The student may thus be influenced by multiple role models who variously embody each aspect of his aspirations especially if they share similar backgrounds [22]. Researchers have also found that higher levels of goal embodiment improve role aspirant's motivation to learn vicariously from such role models, their self-efficacy and confidence while pursuing goals [8], [22]. Role models may also help in overcoming other career or goal impediments when they have some similarity with the role aspirants. Similarity, such as sharing the same social status as gender, race, socio-economic class, ability status etc, helps motivate and inspire the aspirant to overcome stereotype threat and achieving his goal [28]-[30].

III. METHODOLOGY

A. Sample

Data for this study were obtained from a wider study on gender issues in architectural education [10]. Responses for this paper were from a section of the questionnaire distributed to a total of 378 (277 male and 101 female students) students of architecture, drawn from three private universities in Ogun state Nigeria. Only students who were willing completed the questionnaires. Out of this number only 216 (160 males and 56 females) responded to the questions pertaining to this paper. Those who responded had ages ranging from 17 to 23 years of age and were all Nigerian in Nationality

B. Research Instrument

The survey approach was chosen to tackle the research problem. A purpose-designed questionnaire was used to collect the data and it contained a section for demographic information of the students. Drawing from two categories, the students were asked to mention female architect role models whose works they found inspiring. The first category was for Nigerian architects and the second was for the international architects (from anywhere in the world outside Nigeria). A total of 6 names (3 from each category) were expected from each student. Also interviews of 19 female and 16 male students were carried out to find out the sources of their knowledge (Visibility Windows) of the role models.

C. Analysis and Presentation

The responses for each student were recorded in SPSS (Statistical Package for Social Sciences). First, a count of the number of architects mentioned in each category was recorded for each student. Next, the specific names mentioned were listed, frequencies taken and expressed as percentages and proportions. The results were presented in tables and charts as shown in the results section and disaggregated according to the gender of the students for better interpretation. Because there were more male students than females, the proportions used in the analysis were according to the respective genders.

The transcripts of the interviews were content-analysed to find out how the students came to know of these role models and the summary was shown in tabular format.

IV. RESULTS

The results of this study are presented in this section. In Table II, the number of female architects in each category, mentioned by the students are shown. For Nigerian female architects, more than half of the students (55.6%) mentioned none and a higher proportion of males (58.8%) than females (46.6%) were in this category. A significantly higher proportion of females (39.3%) than male students (18.8%) mentioned only one architect while a higher proportion of male (22.5%) than female (14.3%) students mentioned 2 or 3 architects. Sixty-eight Nigerian female architects were mentioned with a statistically significant relationship between the number of architects mentioned and the students' gender ($\chi^2=9.774$, $df=2$, $p=.008$).



Table II Number of female Role-models mentioned by students in gender disaggregated format.

		Student Gender					
		Male		Female		Total	
		N	%	N	%	N	%
Mention Nigerian female architects admired	Mentioned 0	94 _a	58.8	26 _a	46.4	120	55.6
	Mentioned 1	30 _a	18.8	22 _b	39.3	52	24.1
	Mentioned 2/3	36 _a	22.5	8 _a	14.3	44	20.4
	Total	160	100.0	56	100.0	216	100.0
Mention International female architects admired	Mentioned 0	17 _a	10.6	6 _a	10.7	23	10.6
	Mentioned 1	133 _a	83.1	46 _a	82.1	179	82.9
	Mentioned 2/3	10 _a	6.3	4 _a	7.1	14	6.5
	Total	160	100.0	56	100.0	216	100.0

Note: Values in the same row and subtable not sharing the same subscript are significantly different at $p < .05$ in the two-sided test of equality for column proportions. Cells with no subscript are not included in the test. Tests assume equal variances.¹

1. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

Pearson Chi-Square Tests

	Chi-square	Student gender
Mention Nigerian female architects admired	Df	2
	Sig.	.008*
Mention International female architects admired	Chi-square	.056
	Df	2
	Sig.	.972

Results are based on nonempty rows and columns in each innermost subtable.

*. The Chi-square statistic is significant at the .05 level.

In the case of international female architects, nearly all the students (82.9%), mentioned only one architect out of the 11 names that were mentioned. With respect to students' gender, there were no significant differences in the number of visible female architect role models mentioned.

The identities of the female role models mentioned by the students are shown in Table III. All in all, 216 students mentioned 79 distinct Female architects in 373 mentions. This was because the students mentioned more than one role model. The summary is shown in Table III.

It was also observed from table III that only 2 architects, Zaha Hadid (51.5%) and Jumoke Adenowo (9.9%) cumulatively made up above two thirds (61.4%) of the mentioned names. The remaining 77 architects made up the remaining 38.6%. Table III also shows the visibility status of the role-models as determined by the frequency of mention. Zaha Hadid had the highest visibility status described as heightened because she was cited by 88.9% of the aspirants as a role model. This was followed by Jumoke Adenowo whose visibility status was described as clear because she was cited by 17.1% of the aspirants. All the others had a visibility that could be described as hazy because less than 10% of the students cited them as role models. Most of the architects were in this category.

Table III Visibility Status as determined by frequency.

Role model's Identity	Frequency of mention (%)	Visibility status (%)
-----------------------	--------------------------	-----------------------

Zaha	192 (51.47)	88.9	Heightened
Adenowo	37 (9.92)	17.1	Clear
Lecturer 1	17 (4.56)	7.9	
Lecturer 2	10 (2.68)	4.6	
Lecturer 3	7 (1.88)	3.2	
3 others	5 (1.34)	2.3	Hazy
1 other	4 (1.07)	1.9	
5 others	3 (0.80)	1.3	
11 others	2 (0.54)	0.9	
54 others	1 (0.27)	0.5	

Further analysis of the citations of the two women with the highest visibility status revealed that student gender was not related with whether they were cited or not as there was no significant relationship between this and the students' gender. (Table IV).

Table IV Most visible Role-models-Gender disaggregation of visibility

		Student gender		
		Male	Female	Total
		N (%)	N (%)	N (%)
Mentioned Adenowo	Yes	24 (15.0)	13 (23.2)	37 (17.1)
	No	136 (85.0)	43 (76.8)	179 (82.9)
	Total	160 (100.0)	56 (100.0)	216 (100.0)
Mentioned Zaha	Yes	142 (88.8)	50 (89.3)	192 (88.9)
	No	181 (1.3)	6 (10.7)	24 (11.1)
	Total	160 (100.0)	56 (100.0)	216 (100.0)

Pearson Chi-Square Tests

	Chi-square	Student gender
mentioned Adenowo	df	1
	Sig.	.160
mentioned Zaha	Chi-square	.012
	df	1
	Sig.	.913

Results are based on nonempty rows and columns in each innermost subtable.

Content analysis of the interview transcripts showed 5 main visibility windows for the role-models. They are summarised in Table V. Visibility window 1 had the greatest number of role-models while visibility windows 3, 4 and 5 had the greatest impact on the architect's visibility status.

Table V Role-model visibility windows

Visibility windows/Sources	Examples	Role -Models
1 Personal knowledge or contact	Mothers, friends, lecturers, relatives, bosses during internship	L1, L2, L3, others

Besides Zaha or Adenowo: Investigating the Visibility Status of Female Architects as Role Models for Students of Architecture

2	From a professional seminar	Resource persons or speakers at seminars or conferences	others
3	School lessons (curriculum)	Studied in student coursework	Zaha Hadid, Jumoke Adenowo
4	Personal interest and research	Online browsing, journals, books, magazines, television programmes	Zaha Hadid, Jumoke Adenowo
5	Peers and discussions	Discussions with peers	Zaha Hadid, Jumoke Adenowo

V. DISCUSSION

From the results of the survey, it was seen Nigerian female architects mostly had poor visibility status as role models. However, the choice of 68 Nigerian female architects by some of the students as role models, suggests that there are competent female architects who could play this role but were not known to many. These were all architects that the students had come to know from 5 ‘visibility windows’ or sources. The first source was by personal knowledge or contact, the second was from seminars or conferences, the third was from mentions in school lessons, the fourth from personal searches and the fifth from peers and discussions.

However, the outstanding visibility status of Zaha Hadid and Jumoke Adenowo when examined raised a question “What makes these two to be handpicked out of the several?”. Interviewing some of the students, revealed that Zaha Hadid was the only one that had been found from their studies and assignments on female architects. Another female student revealed that a television interview hosted by the Cable News Network (CNN) had publicised Jumoke Adenowo as a promising Nigerian female architect. One fact that thus stands out is that the media is awash with the profiles and works of these two women making their status desirable, rendering them as representations of the attainable, and thus enhancing their visibility status according to [23]. This is unique since probably the students have never met them in person, but their enhanced visibility [22] makes them to be more generally desirable than others. When the other role models that were mentioned are also considered, it infers that they also inspire the students individually, but their poor visibility status makes it appear that only few females are successful in the field of architecture. Some of them are lecturers in their respective schools and serve as both a source of inspiration [29] and behavioural models to both male and female students. Some of them were encountered during internship or industrial training sessions and have served as role models in all three possible ways. These role models, however in their respective rights, need to be showcased to make them more visible, desirable and representations of the attainable [18] to encourage more females to choose architecture as a viable career option.

Going by the motivational theory of role modelling [24], a role model needs to be desirable or evoke inspiration in the role aspirants. Cursorily, Zaha and Adenowo embody these qualities because their visibility is heightened by the celebration of their achievements and overshadows that of the other female architects making them appear as the ideal role models. For Zaha Hadid, the internet which appears to be the

most effective visibility window is the most accessible media for the students is awash with information about her achievements especially since winning the Pritzker prize in architecture in May 2004. This award has been argued as a factor responsible for the positive turning point in retention rates for female architects in practice [11]. It can thus be argued that Zaha Hadid became an icon for what is attainable as a female architect [18] making many female architects to continue in the profession since the stereotype threat had been broken. For Adenowo also, her well-highlighted achievements are also trailing on the internet enhancing her role-model status as a representation of what is desirable and attainable [18] for Nigerian females with whom they have similarity. Previously, simply typing in “famous female architects” on a google search page mostly yield results of Zaha and Kazuyo Sejima highlighting their Pritzker winning status with pictures of their works dominating. While acknowledging their outstanding achievements, it should be noted that there yet exist several other female architects who have outstanding achievements. In this category are other female architects who have succeeded both in active professional practice and in other aspects of the profession from whom these students learn from vicariously [27] in the classroom, in office internship and elsewhere to whom these students allude role model status.

Meanwhile other females like Jeanne Gang, Amanda Levete, Elizabeth Plater-Zyberk, Manuelle Gautrand and Odile Decq, are good examples of females who have also greatly excelled in architectural practice but are not as celebrated or as visible as Zaha Hadid or Jumoke Adenowo. Intentionally highlighting their achievements and making it visible could be a good way to counter the stereotype that women cannot succeed in architectural practice [18]-[20]. Good examples of those who have intentionally created these visibility windows are the International archive for women architects (IAWA) created by Virginia Polytechnic Institute and State University and Pioneering Women of American Architecture database created by Mary McLeod and Victoria Rosner, showcasing 50 females (architects, designers and writers) who have made important contributions to American architecture.

While this suggestion has gained ground in more developed countries, African countries especially Nigeria from which this paper originates have not yet fully taken this step. Mobolaji Adeniyi, Segun Abiodun, Tosin Osinowo, Itunu Hotonou and all the other mentioned architects are other examples of successful Nigerian female architects who have hazy visibility due to reasons beyond the scope of this paper. The fact that they were all mentioned by some students both male and female in this study shows that their works need to be rendered more visible. Highlighting the successes of these female in an inspirational manner is likely to evoke admiration, desirability, and show forth attainability by other role-aspirants who share similar backgrounds or attributes with them as argued by [24]. The Female Architects of Nigeria (FAN), NIA and other bodies or individuals should embrace this novel idea and explore the mentioned visibility windows to since it



will go a long way to show students of architecture, especially female and other interested young females that the course they have studied can be turned into a career and thus stem the tide of attrition by female architects.

Also, in the area of curriculum review, knowledge of successful female architects could be fused into the curricular grains of schools of architecture as suggested by [33] Conscious driving of successful female architects' contribution in class study or curriculum would greatly contribute to increasing the visibility status of female architects in the country and show the diverse contributions of female architects who can embody diverse possible roles for the role aspirants and thus help erase the stereotype threat in the architectural profession.

Another way of increasing the visibility of female architects is by consciously going to showcase architecture as a career for women to youngsters in their schools or through workshops, seminars and toys. A good example is the Barbie architect [7] which is expected to portray architecture as a viable profession for females to young girls and erode the threatening stereotype from their minds from a tender age.

CONCLUSION

In conclusion, having investigated the visibility status of female architects as mentors to architecture students in 3 private universities in Nigeria, it was found that there were many female mentors; but out of the many, two were outstanding while one was most outstanding for both male and female students. This was accelerated by media which proved to be the best visibility window. For international architects, and overall, Zaha Hadid had the highest visibility status described as heightened while for Nigerian Architects, Jumoke Adenowo had the highest visibility status described as clear. The other 77 architects had a very low visibility status described as hazy. This could be discouraging to the female students leading to a stereotype threat triggering attrition and deflection from architecture.

A conscious need for introduction of counter stereotypical role models is needed to erode the threat. The various ways of enhancing the visibility status of female architects embodying several desirable role model traits, especially suitable to the Nigerian society were also suggested. In the same vein, interested researchers and stakeholders i.e. Female Architects of Nigeria (FAN) or Nigerian Institute of Architects (NIA) may need to advance further investigation in this direction to further navigate other means of collecting high-stake achievements-records and showcasing these individuals to the entire world through very effective visibility windows such as those recommended.

ACKNOWLEDGMENT

The authors acknowledge and appreciate Covenant University Centre for Research, Innovation and Development (CUCRID) for the financial support given to this work

REFERENCES

1. Stratigakos, D. (2016). *Where Are the Women Architects?* Princeton; Oxford: Princeton University Press.
2. United Nations, (2018). The sustainable development Goals report: 2018. New York: United Nations

3. Treadwell, S. & Allan, N. (2012): Limited Visibility: Portraits of Women Architects, *Architectural Theory Review*, 17:2-3, 280-298 <http://dx.doi.org/10.1080/13264826.2012.736870>
4. Stratigakos, D. (2014). Women architects: Building change <https://www.aljazeera.com/indepth/opinion/2014/08/womenarchitects-building-chan-2014825101929831491.html>. Retrieved on 28th June 2018
5. Oluwunmi, A. O, Emeghe, I., Oluwadamilola, A., Fulani, O., Peter, N. J. and Akinjare, O. A. (2017) Gender Inequality and Women Discrimination in Real Estate Firms in Lagos State, Nigeria. *Gender Inequality and Women Discrimination in Real Estate Firms in Lagos State, Nigeria* 29th IBIMA conference, 2017 proceedings pp.4367-4377.
6. Tunji-Olayeni, P.F., Afolabi, A.O., Adewale, B.A., Fagbenle, A.O. (2018). Survey dataset on work-life conflict of women in the construction industry. *Data-in-Brief*, 19, pp. 921-924. DOI: 10.1016/j.dib.2018.04.095
7. Anthony, K. H. (2016). Gender issues in architecture. In M. Kanaani & D. Kopec (Eds.), *The Routledge companion for architecture and design* (pp.533-548), New York: Routledge, Taylor and Francis group
8. McCann, H. (2007). Architect: The magazine of the American Institute of Architects (March 12, 2007). <http://www.architectmagazine.com/architecture/02.aspx> Retrieved on July 16, 2014
9. Fuesting, M. & Diekmann, A (2016) Not by Success Alone: Role Models Provide Pathways to Communal Opportunities in STEM, *Personality and Social Psychology Bulletin* Vol 43, Issue 2, pp. 163 – 176. <https://doi.org/10.1177/0146167216678857>
10. Lawrence, S. L. (2014). Anything You Can Do?: The Influence of Role Models on Architecture Students' Future Career Confidence"(2014). A Research Paper for Master of Arts, South Illinois University, Carbondale, IL http://opensiuc.lib.siu.edu/gs_rp/525
11. Stratigakos, D. (2016) "Unforgetting Women Architects: From the Pritzker to Wikipedia," *Places Journal*. Accessed 08 Aug 2018. <https://doi.org/10.22269/130603>
12. Fulani, O. A. (2017) Gender issues in the learning of architecture in private universities in Ogun state, Nigeria. A thesis submitted to the Department of Architecture, Covenant University, Ota, Ogun state, Nigeria in partial fulfilment of the requirements for the award of Doctor of Philosophy degree in architecture.
13. Silberstang, J. (2011). Learning gender: The effects of gender-role stereotypes on women's lifelong learning and career advancement opportunities. In M. London (Ed.), *The Oxford Handbook of Lifelong Learning*, 370-388, Oxford Library of Psychology. New York: Oxford University Press.
14. Steele, C. M., & Aronson, J. (1995). Stereotype threat and the intellectual test performance of African Americans. *Journal of Personality and Social Psychology*, 69, 797-811. <http://dx.doi.org/10.1037/0022-3514.69.5.797>
15. Adewale B.A, Aderonmu P.A., Fulani O.A, Babalola O.D and Awoyera, P. O. (2018). Societal Attitude towards Vocational Education in Ogun State, Nigeria, *International Journal of Mechanical Engineering and Technology*, 9(8), 2018, pp. 1029-1040.
16. De Graft-Johnson, A., Manley, S. & Greed, C. (2003). *Why do women leave architecture?* Bristol: Royal Institute of British Architects.
17. Klein, O., Pohl, S., & Ndagijimana, C. (2007). The influence of intergroup comparisons on Africans' intelligence performance in a job selection context. *The Journal of Psychology*, 141, 453-467.
18. McIntyre, R. B., Paulson, R., & Lord, C. (2003). Alleviating women's mathematics stereotype threat through salience of group achievements. *Journal of Experimental Social Psychology*, 39, 83-90.
19. Cohen, G. L., Garcia, J., Apfel, N. & Master, A. (2006). Reducing the racial achievement gap: A social-psychological intervention. *Science*, 313, 1307-1310.
20. Aronson, J., Fried, C. B., & Good, C. (2002). Reducing the Effects of Stereotype Threat on African American College Students by Shaping Theories of Intelligence. *Journal of Experimental Social Psychology*, 38, 113-125.
21. Fulani, O., and Amole, D. (2016) Gender and Learning in the Architectural Design Studio, *EDULEARN16 Proceedings*, pp. 3459-3468.
22. Cloud, D. (2018). Role models lesson transcript.



Besides Zaha or Adenowo: Investigating the Visibility Status of Female Architects as Role Models for Students of Architecture

<https://study.com/academy/lesson/>

23. Toy, M., & Pran, P. (2001). *The Architect: Women in Contemporary Architecture*. New York: Watson-Guptill.
24. Morgenroth, T., Ryan, M. K., & Peters, K. (2015). The Motivational Theory of Role Modeling: How Role Models Influence Role Aspirants' Goals. *Review of General Psychology*. Advance online publication. <http://dx.doi.org/10.1037/gpr0000059>
25. Merton, R. K. (1957). *Social theory and social structure*. New York, NY: Free Press.
26. Bandura, A. (1977). *Social learning theory*. Englewood Cliffs, NJ: Prentice Hall.
27. Bandura, A. (2004). Social Cognitive Theory for Personal and Social Change by Enabling Media. In A. Singhal, M. J. Cody, E. M. Rogers, & M. Sabido (Eds.), *LEA's communication series. Entertainment-education and social change: History, research, and practice* (pp. 75-96). Mahwah, NJ, US: Lawrence Erlbaum Associates Publishers.
28. Hoyt, C. L. (2013). Inspirational or self-deflating: The role of self-efficacy in elite role model effectiveness. *Social Psychological and Personality Science*, 4, 290–298. <http://dx.doi.org/10.1177/1948550612455066>
29. Paice, E., Heard, S., & Moss, F. (2002). How important are role models in making good doctors? *BMJ: British Medical Journal*, 325, 707–710. <http://dx.doi.org/10.1136/bmj.325.7366.707>
30. Bettinger, E.P. and Long, B.T., (2005) Do faculty serve as role models? the impact of instructor gender on female students. *American Economic Review* Volume 95, Issue 2, May 2005, Pages 152-157
31. Kapitanoff, S. and Pandey, C. (2017). Stereotype threat, anxiety, instructor gender, and underperformance in women. *Active Learning in Higher Education* pp. 1–17: 10.1177/1469787417715202
32. Kawasaki, T. and Iida, J. (2018), Factors affecting the aspirations of teachers to become school administrators: Presence of a role model and experience in school management. *Japanese Journal of Educational Psychology*, 66 (1), pp. 67-80.DOI: 10.5926/jjep.66.67
33. Kingsley, K., (1988). Gender Issues in Teaching Architectural, *Journal of Architectural Education*, Vol. 41(2) <http://www.jstor.org/stable/1424831> Retrieved: 02/04/2014



Dr. Foluke Jegede is an architect by training. She lectures in the Department of Architecture at Covenant University, Ota Nigeria

AUTHORS PROFILE



Dr. Omoyeni Fulani is an architect by training. She lectures in the Department of Architecture at Covenant University, Ota Nigeria.



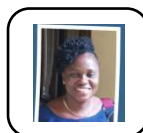
Professor Dolapo Amole is a professor of Architecture. She lectures in the Department of Architecture at Obafemi Awolowo University, Ile-Ife, Nigeria. Her works are widely published in several reputable outlets in Nigeria and internationally.



Dr. Peter Aderonmu is an architect by training. He lectures in the Department of Architecture at Covenant University, Ota Nigeria.



Dr. Daniel Babalola is an architect by training. He lectures in the Department of Architecture at Covenant University, Ota Nigeria



Dr. Bukola Adewale is an architect by training. She lectures in the Department of Architecture at Covenant University, Ota Nigeria